Leek Urban
District Council.

JOINT REPORT

OF THE

Medical Officer of Health

AND

Sanitary Inspector

ON THE

Sanitary Condition of Leek,

For the Year ending 1901.

Charles Kirkham, Printer, &c., Derby Street, Leek

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TO THE LEEK URBAN DISTRICT COUNCIL.

Mr. Chairman and Gentlemen,

In submitting my report for the year 1901, I wish to point out that as these reports are framed according to the requirements of the Local Government Board and County Council, there is necessarily a large amount of repetition of previous reports, as a statement of the local circumstances and a history of local sanitary questions, which may seem superfluous to you, may often be needed by them.

The Leek Urban Sanitary District covers an area of 1,460 acres, and in the highest portion of what is a hilly district, attains an elevation of about 600 feet above sea level.

A line drawn across the middle of the district, due north and south, marks fairly accurately its geological division: on the east of this line is a sub-soil of clay, on the west one consisting of sand.

Investigations have been made with the view of ascertaining what influence this difference of sub-soil has on the health of the inhabitants, both in respect to the general mortality, and more particularly as to its influence on the mortality from Phthisis, with the somewhat unexpected result that no appreciable difference could be demonstrated.

Further comparative investigations relating to other diseases would be interesting and instructive.

House Accommodation.

The house accommodation is good, both as regards its adequacy and fitness for habitation. A sufficiency of open space about the houses is much more apparent in the more recently erected buildings, and their surroundings are clean.

Supervision is constantly exercised over the erection of new houses.

SEWERAGE AND DRAINAGE.

In last year's report I requested your attention to "a few outlying portions of the district" which required drainage improvement; and in the monthly report for August I specially mentioned the unsatisfactory condition of the west outfall, and asked for your immediate consideration. May I again bring the matter before you, so that early steps may be taken to abate the nuisance?

Another outlying portion which calls for attention in the near future is the district adjoining the Canal Wharf, which should be properly drained, and the sewage conveyed to the west side of the sewage farm.

The separation of the storm-water from the sewage is nearing completion on the south side of the town.

SEWAGE DISPOSAL.

Last year I reported as to the condition of the sewage farm on the south side of the town, and the proposed under-drainage of the lower irrigated area to remedy its constantly soaked condition.

This has been done in one portion of this area, and judging from the latest analyses of the effluents, promises to be a remedy for the trouble. In October your Committee met Dr. Reid and Mr. Alderman Bagnall to consider the question of improving the effluent, by either putting down artificial filters on the upper part of the present farm, or using a portion of land on the east of the railway for further land treatment. Subsequently your Inspector took samples of the effluent from *(a)* downward filtration area; *(b)* broad irrigation area, and *(c)* outfall. The following are the analyses, report and letter of Mr. Carter Bell, to whom they were submitted.

Manchester, Nov. 29th, 1901

Dear Sir, I enclose the analyses of the three effluents. I cannot say that there is very much that is wrong with them; I consider them to be fairly good, and fit to run into any stream.

Yours truly, J. CARTER BELL.

Copy of Analyses by J. Carter Bell, Esq., Analyst for the County of Chester, of Samples of Effluent from Leek Sewage Farm.

ALL RESULTS ARE EXPRESSED IN GRAINS PER GALLON.

	Downward Filtration Area	Broad Irrigation Area.	Outfall
Appearance in tube	clear	clear	clear
Smell when heated to 100°F ..	Very faint	Very faint	Very faint
Total solid matter at 212°F ..	43·6	34·1	35·0
Total mineral matter at 356°F ..	40·0	30·6	30·7
Loss	3·6	3·5	4·3
Chlorine in Chlorides	6·7	4·7	3·7
Nitrogen in Nitrites	nil	nil	nil
Nitrogen in Nitrates	1·23	1·15	1·15
Free Ammonia	·56	·49	·63
Albuminoid Ammonia	·084	·168	·196
Oxygen absorbed 3 min. at 60°	·20	·20	·30
4 hours at 60°	·70	·50	·90
1 hour at 212°	1·5	1·4	2·0
Alkalinity calculated as Free Lime	nil	nil	nil
Microscopical Examination of the Deposit	slightly organic	slightly organic	slightly organic
Suspended matter	Trace	Trace	1·0

I consider these three effluents to be fairly good. Nos. 1 and 2 are better than No. 3. No. 3 I cannot call a bad effluent, but it would be much improved by futher filtration.

J. CARTER BELL,
County Analyst.

Dated Nov 29th, 1901.

It is remarkable that No. 3, or the outfall effluent, comes out the worst. The most likely solution of this anomaly is that in some way a leakage of almost crude sewage has gained access to the drains near the outfall.

On the north side the old land treatment is still maintained.

EXCREMENT DISPOSAL.

The system in vogue for the disposal of excrement is mainly the water-carriage system, the remaining privies being gradually replaced by water closets. During the year 8 privies have been converted into water closets.

REMOVAL AND DISPOSAL OF HOUSE REFUSE.

The removal of house refuse is accomplished by the public scavengers employed by the Council, who make weekly rounds to collect the contents of about 2,000 movable receptacles; otherwise where ashpits exist these are emptied on notice being sent to the Authority. During the year 30 offensive ashpits have been abolished.

Last year I wrote:—"The disposal of refuse consists simply in its being emptied on the 'tip,' and as in addition to ashes this refuse contains a mixture of decomposing animal and vegetable matter, the 'tips' necessarily become a source of danger to the community. This is a matter which calls for the attention of the Council in the near future; the 'tip' system should be entirely abolished, and in its place a 'destructor' erected, in which these objectionable matters could be cremated."

I see no reason to modify this opinion, and though the subject has been under discussion several times during the year, and the Surveyor has prepared a report strongly advising a Destructor, which the Inspector and I strongly endorsed on sanitary grounds, we have absolutely failed to convince the Committee, which proposes one site after another to be used as a "tip."

WATER SUPPLY.

The water supply is one of which we are justly proud: taking its origin in a series of springs in the millstone-grit of the Roches, it is carried directly, practically without storage, to the town. The only approach to storage consists in the use of a reservoir situated on the outskirts of the town, which receives the surplus of water during the night, this is again reduced by the increased demand during the day, diminishing the pressure in the mains, and allowing a flow from the reservoir through an automatic valve. The supply is sufficient, wholesome, and free from risk of pollution.

Lodging-houses, slaughter-houses, bake-houses, dairies, cowsheds, &c., are dealt with in detail in the Inspector's report.

INFECTIOUS DISEASES AND ISOLATION HOSPITAL.

Infectious diseases are as far as possible dealt with at the Isolation Hospital: true isolation in the homes being well nigh an impossibility. In this connection I heartily endorse the remarks of the Inspector.

The heating arrangements as mentioned in last year's report have been carried out and are a decided improvement.

There may yet be need to increase the number of radiators to attain a higher temperature in some of the wards.

The Hospital accommodation cannot be described as adequate to all emergencies in times of serious epidemics. During periods when two or three epidemics of different diseases are prevalent at the same time, more available space is desirable. To meet the requirements of the growing population, an extension of the present buildings will be necessary, and should be contemplated at an early date.

In any contemplated extension, a ward set apart for doubtful cases would be beneficial, and would render our equipment for the fight against infectious disease more complete.

For the accommodation of Small-Pox cases it is probable that arrangements will shortly be completed with the Board of the North Staffs. Joint Small-Pox Hospital for the reception of our cases.

DISINFECTION.

Disinfection is invariably effected by means of the dense fumes of vaporised carbolic acid, produced by a portable apparatus designed by Mr. Farrow more than twenty years ago, and now made by Messrs. Calvert, of Manchester. This method has been constantly used in this district since that time to the exclusion of all other methods; it is rapid, clean, efficient, and is not injurious to furniture or metal work, and in no way affects the colours of pictures, wall papers, or delicate fabrics; all great advantages over the sulphur method.

Half-a-pound of phenol can be converted into vapour in three minutes, and is sufficient for the disinfection of a room of the capacity of 1,000 cubic feet.

I have personally proved the efficacy of this vapour by extended bacteriological experiments, and beg to call the attention of the various Authorities of the County to this simple means of disinfection.

MORTALITY RETURNS, &c.

The year 1901 would have proved a generally good one as regards the health of the town, but for the fact that I have to record a comparatively heavy infant mortality.

The deaths for the year numbered 294, which is 11 more than the average for the preceding 10 years, and gives a mortality rate of 18·9 per 1000, which when corrected by the deduction of 17 non-residents, leaves an actual death-rate of 17·8 per 1,000 of the living.

The mean age at death of each deceased individual was of all persons 38·8 years, of males 34·9, and of females 42·6 years.

AGES AT DEATH.

Under 1 year		...	...	68
Between 1 and 5 years			...	30
"	5 " 15	"	...	9
"	15 " 25	"	...	9
"	25 " 65	"	...	84
Over 65 years		...	...	94

There was only 1 uncertified death in the district during the year.

BIRTHS.

The number of births registered during the year was 406, 8 less than last year's return, and 3·7 less than the average for the preceding 10 years. These comprised 212 males and 194 females, giving a birth rate of 26·1 per 1,000 of the living.

INFANT MORTALITY.

This is undoubtedly the most unpleasant feature of these returns; we have no less than 68 deaths of infants under 1 year, which is equal to a rate of 167·4 per 1,000 births, the average rate for Staffordshire for the year 1900 being 176, and that of 33 large towns in England, 172 per 1,000 births.

It will be seen from table 3 of the Sanitary Inspector's report, our present rate of 167·4 per 1,000 is 19 per 1,000 more than the average for the preceding 10 years, and is actually 5 in excess of the average rate for the 10 years 1861-70.

There is no doubt the epidemic of Whooping-cough considerably swelled this number, but other causes are constantly at work, among which—the most important—is improper feeding, due to a large extent to the employment of married women in the factories.

The period of prohibition from work after confinement, instead of being as at present one month, might be beneficially extended to at least one year; but in a town such as ours where so much female labour is demanded, such an arrangement would mean constant dislocation of work: the only alternative appears to me to be the establishment of one or two crèches or day nurseries, where the little ones could be cared for and properly fed by responsible nurses whilst the mothers were at work.

Many times during the year your committee has discussed the question of infant mortality, and has issued a good looking card giving instructions for feeding babies. These cards have been delivered from house to house, in the day schools to elder scholars, and by the registrar to every parent registering the birth of a child.

I have good reason to believe they have been useful, having seen a large number hanging on the kitchen walls.

They are appreciated by the parents, and in my opinion are infinitely more effective than the more perishable leaflets previously in use.

The Sanitary Inspector, at my request, compiled the following table, showing the population, number of births, number of deaths under the age of one year, and number of deaths at all ages, in each of the Ecclesiastical Districts, situate within the Urban Sanitary District of Leek, during the half-year ending June, 1901. (W. H. H.)

Ecclesiastical District.	Population.	No. of births.	No. of deaths under 1 year.	No. of deaths at all ages.	Annual birth-rate to 1,000 living.	No. of deaths under 1 year to 1,000 births.	Annual death-rate under 1 year to 1,000 living at all ages.	Annual death-rate at all ages
S Edward's	6895	103	14	68	29·8	136.9	4·0	19·7
S Luke's -	4924	58	14	65	23·4	241·3	5·6	26·4
All Saints' -	3665	68	28	49	27·1	411·7	15·2	26·7
Total - -	15484	229	56	182	29·6	244·5	7·2	23·5
Leek Urban Sanitary District. 10 years 1891—1900.	Mean population 14803	4177	620	2832	28·2	148·4	4·2	19·1

The only reason for the higher infant mortality in the All Saints' District is found in the fact that this district includes several streets where there is more than the average number of mothers employed in mills, &c.

It is a remarkable fact, and one which may throw some light on this question, that out of the 68 deaths in infants under 1 year, 43 of these, that is 63 per cent. were insured in one single Insurance Society in this town, and some of them in two or three Insurance Companies. To say the least, the inference is not a pleasant one.

For further information regarding infant mortality refer to Table 3 of the Inspector's report, with whose remarks I thoroughly agree, and in connection with this subject I may add that 8 still-born children have been registered during the year.

CAUSES OF DEATH.

The *Zymotic* class of diseases is responsible for 34 deaths, the average for the previous 10 years being 19.3; of these 34, 6 were due to epidemic influenza, 2 to enteric fever, 1 to scarlet fever, 3 to diphtheria, and 18 to whooping-cough; this last named has, to a considerable extent, increased our infant mortality, and though looked upon as one of the minor zymotic diseases, whooping-cough is a very fatal one, principally on account of carelessness on the part of parents in allowing children affected to run about, even when they are suffering from bronchitis or other complication.

There is generally no attempt at isolation, and if in this wide-spread epidemic, occuring in the severe weather experienced in the early months of the year, notification and isolation had been practised, many lives might have been saved and the spread of the disease largely prevented.

The December number of *Public Health* contains an interesting article by Dr. W. G. Willoughby on the prevention of some of the minor zymotic diseases, including measles, whooping-cough, and diarrhœa.

His remarks are so peculiarly adapted to this question as it affects us, that I take the liberty of giving the following quotations:—

"I propose to make a few remarks on the want of general attention to the posibility of preventing the extensive fatality that occurs year by year from the so called minor zymotic diseases, especially measles, whooping-cough, and epidemic diarrhœa. These three diseases are omitted from the Notification Act of 1889, and I think it is partly due to their omission from that Act, partly due to the fact they are so constantly with us, and partly because the cases are often so mild, that not merely the laity, but in many cases the medical profession also, have been led to look upon them as if they were less important than the diseases which are specially mentioned in the Notification Act. No doubt the deases mentioned in that Act if allowed free sway—that is, if no precautionary measures were taken against them—would have remained or become far more serious than measles, whooping-cough, and diarrhœa; but the measures of precaution against such diseases as plague, cholera, and small-pox have reached to such a pitch with such good results that I think, while not relaxing the efforts against these diseases, some more attention should be paid to the other so-called minor zymotic diseases.

“As illustrating the importance of giving attention to preventive measures in the case of the three diseases—measles, whooping-cough, and diarrhœa—I may mention that in 1899, while the death-rate from small-pox was 5 per million, from typhus 1 per million, from scarlet fever 117 per million, from enteric fever 119 per million, and from diphtheria 293 per million, the death-rates from the three diseases were—from measles 315 per million, from whooping-cough 319 per million, and from diarrhœa no less than 937 per million; so that the death-rate from diarrhœa was more in itself than all the other death-rates from zymotic diseases (not including tuberculosis), except measles and whooping-cough, put together. Familiarity with measles, whooping-cough, and diarrhœa, has apparently bred a sort of contempt for them, and a feeling that they are almost non-preventable diseases, and diseases which must occur in children. The popular idea is to this effect most certainly, but it has been abundantly shown that it is not necessary for children to have either measles, whooping-cough, or diarrhœa, and that these diseases can be prevented; moreover, even if they can be merely postponed, so much the better, for, as a general rule, the later these diseases occur in childhood the better the chance of recovery of the child, and also the longer the chance of an attack can be deferred the less likely is it to occur. The idea that the sooner the child has measles, whooping-cough, etc., the better, is distinctly wrong, and this cannot be too much impressed upon parents.

"Taking actual figures instead of rates each year, speaking generally, about 10,000 children die from measles, about 10,000 die from whooping-cough, and about 30,000 from diarrhœa—figures that are not approached by any other infectious disease with the exception of influenza, diphtheria, and above all, phthisis. Granting that many of these are delicate, unsatisfactory lives that would have soon been lost anyhow, there is a large balance out of the 50,000 whose loss sanitary science must devote more attention to preventing."

The author advocates the following preventive measures for measles and whooping-cough: (1) Notification, if followed by isolation; (2) instructing the parents and guardians by leaflets and by personal explanations: (3) the instruction of teachers of schools in the first signs of these diseases, and the general method of preventing their spread; (4) co-operation between the school managers and teachers and the officials of the sanitary department; (5) disinfection carried out immediately of all effects belonging to the patients.

As regards diarrhœa, the author advocates a rigorous elimination of all contributory causes of that disease.

In all cases of infectious disease the premises have been promptly inspected, and a most careful investigation made to discover the source of infection, sanitary defects discovered in a few instances being promptly remedied.

In all cases the milk supply was free from suspicion.

There were 19 cases of scarlet fever notified, of this number 14 were removed to the Isolation Hospital, and 5 were treated at their homes.

Phthisis has been responsible for 26 deaths, the average for the preceding 10 years being 21·9. The infectious character of this disease should be more fully recognised, and until its notification is adopted, an intimation from the medical attendant to the Sanitary Authority at the termination of a case, would ensure disinfection of rooms. &c., which would tend to minimise the danger to others.

On this subject Mr. Farrow has kindly supplied me with the following review :—

"Having read the very interesting discussions at the recent Medical Congress on the important subject of tuberculosis, it occured to me that the death-rate from Phthisis within the Urban Sanitary District of Leek during the last 50 years might perhaps be of interest. It is believed that the measures adopted by the Local Authority to secure the better ventilation of Factories, Workshops and other buildings within the town, have largely contributed to the improvement shown in the subjoined table."

Table shewing the death-rate from Phthisis to 1,000 living during each of the following periods from January 1st, 1851, to December 31st, 1900.

10 years	Mean population.	Number of Deaths	Annual rate to 1,000 living.
1851 — 60	9653	491	5·08
*1861 — 70	10752	409	3·80
1871 — 80	12098	281	2·32
1881 — 90	13496	281	2·08
1891 — 1900	14803	232	1·56

* Factory Ventilation began 1864 & 1865.

In the class of Local diseases the mortality from diseases of the brain and nervous system was 21, the average for 10 years being 38 ; that from heart affections 38, the 10 years' average being 31·2 ; that from diseases of the digestive organs 18, the average for 10 years being 22·9 ; and that from diseases of the respiratory organs 44, the 10 years' average being 52·2.

As these diseases are chiefly the result of mistaken and injurious habits of life, we do not find that improved sanitation has much influence over them, although in other classes this agency has been most effectual, as demonstrated by the fact that within the last 40 years the rate of mortality has been reduced 30 per cent., and the duration of life increased 30 per cent., as compared with the 10 years ending 1860.

There is nothing more in this year's mortality returns requiring special comment, and I append table giving principal causes of death in 1901 :—

	Number of deaths.	Average of preceding 10 years.	Mortality per 1,000 of population.
Whooping-cough	18	3·7	1·16
Influenza	6	1·2	0·38
Diphtheria and membranous croup ..	5	0·7	0·32
Scarlatina	1	2·2	0·06
Epidemic diarrhœa and dysentery	3	——	0·19
Enteric fever	2	2·5	0·12
Total zymotic diseases ..	35	19·3	2·25
Phthisis	26	21·9	1·67
Bronchitis, pleurisy, and pneumonia ..	44	52·2	2·80
Heart disease	38	31·2	2·45
Cancer	11	10·7	0·70

VACCINATION.

Through the courtesy of the Vaccination Officer, I am able to give figures relating to the last 5 years' experience in this District. From these it will appear that the new Act 1898, is working more satisfactorily than the old one did.

	Births	Vaccinated	Exemptions	Insusceptible	Removed	Dead	Postponed
1897	434	266	98	1	17	52	0
1898	433	243	139	0	9	43	0
1899	377	262	49	0	10	50	6
1900	414	218	41	1	6	39	10
1901	406	216	51	0	2	41	18
	Under the vaccination age about 78.						

The number of exemptions is 12 per cent. of the total number of births registered, which is sadly too high for the safety of the community and it is heartily to be desired that the small-pox epidemic now prevailing and spreading through the country may stimulate vaccination and re-vaccination, so that we may be absolutely proof against this loathsome disease.

Vaccination is generally efficiently performed. It is, however, a matter of regret that the Act does not compel the private practitioner to vaccinate in four places, as the public vaccinator is compelled to do. It would also, in my opinion, improve the efficiency of vaccination if the Government supplied lymph to all practitioners.

The following tables are compiled in the form required by the Local Government Board and the Staffordshire County Council :—

"Table I."
"Table II." is unnecessary for this district.
"Table III."
"Table IV."

"TABLE I."—VITAL STATISTICS OF WHOLE DISTRICT DURING 1901 AND PREVIOUS YEARS.

YEAR.	Population estimated to middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Nett Deaths at all ages belonging to the District.	
				Under 1 Year of Age,		At all Ages.						
		Number.	Rate.*	Number.	Rate per 1,000 Births registered	Number.	Rate*				Number.	Rate*
1	2	3	4	5	6	7	8	9	10	11	12	13
1891.	14154	406	28·6	51	125.6	257	18·1	24	9	..	248	17·5
1892.	14285	417	29·1	65	155·8	322	22·5	31	4	..	318	22·2
1893.	14406	425	29·5	59	138.8	292	20.2	26	10	..	282	19·5
1894.	14593	429	29 4	71	166 2	250	17 1	30	11	..	239	16·3
1895.	14746	447	30·3	81	181·2	295	20 0	30	13	..	282	19·1
1896.	14920	408	27·3	47	115 1	257	17 2	24	9	..	248	16 8
1897.	15037	418	27·7	54	129 1	289	19 2	36	16	..	273	18 1
1898.	15174	437	28·7	59	135·0	267	17·5	32	9	..	258	17 0
1899.	15242	376	24·6	74	196·8	323	21·1	40	16	..	307	20·1
1900.	15386	414	26·9	59	142 5	280	18 2	40	20	..	260	16 9
Averages for years 1891-1900.	14803	417 7	28·2	62	148·4	283·2	19·1	31 3	11·7	..	271·5	18 3
1901.	15509	406	26·1	68	167·4	294	189	38	18	1	277	17·8

* Rates in Columns 4, 8 and 13, calculated per 1,000 of estimated population.

Note.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums.

Area of District in acres (exclusive of area covered by water) 1460, total population at all ages 15,484, number of inhabited houses 3,380, average number of persons per house 4·58, at census 1901.

The "Public Institutions" in respect of the deaths, in which corrections have been made, are Leek Union Workhouse, Leek Cottage Hospital, and Leek Isolation Hospital.

"TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1901.

NOTIFIABLE DISEASE	CASES NOTIFIED IN WHOLE DISTRICT.						
	At all Ages.	Under 1.	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards.
Small-pox	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..
Diphtheria	14	2	2	10	..	..	..
Membranous croup ..	1	..	1	..	..	..	..
Erysipelas	11	1	..	..	2	7	1
Scarlet fever	19	1	8	6	3	1	..
Typhus fever ..	..	..	..	..	..	..	..
Enteric fever	12	..	..	3	3	6	..
Relapsing fever ..	..	..	..	..	..	..	..
Continued fever .	..	..	...	..	..	..	..
Puerperal fever ..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..
Totals	57	4	11	19	8	14	1

Number of cases removed to hospital from the Leek Urban District diphtheria 10, scarlet fever 14, enteric fever 8 ; total 32.

"TABLE IV."

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1901, IN THE LEEK URBAN DISTRICT.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.						
	All ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards
Small-pox	..	..	..	..	..	..	..
Measles	..	..	..	..	..	..	..
Scarlet fever ..	1	..	1	..	..	..	..
Whooping-cough ..	18	10	8	..	..	..	..
Diphtheria and membranous croup ..	5	1	2	2	..	..	..
Croup	..	..	..	..	..	..	..
Fever – Typhus ..	..	..	..	..	..	..	..
Fever – Enteric ...	2	..	..	..	..	2	..
Fever – Other continued	..	..	..	..	..	..	..
Epidemic influenza ..	6	..	1	..	..	3	2
Cholera	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..
Diarrhœa	3	2	..	..	..	1	..
Enteritis	5	4	..	..	..	1	..
Puerperal fever ...	..	..	..	..	..	..	..
Erysipelas	1	1	..	..	..	..	..
Other septic diseases	...	..	..	..	..	..	..
Phthisis	26	..	1	1	6	18	..
Other tubercular diseases	3	1	1	..	..	1	..
Cancer, malignant disease	11	..	..	..	1	8	2
Bronchitis	23	6	1	1	..	3	12
Pneumonia	16	6	5	..	..	5	..
Pleurisy	..	..	..	..	..	..	..
Other diseases of Respiratory organs	5	2	..	..	..	..	3
Alcholism / Cirrhosis of liver ..	4	..	..	..	..	3	1
Venereal diseases ..	..	..	..	..	..	..	..
Premature birth ..	11	11	..	..	..	..	..
Diseases and accidents of parturition ...	3	..	..	..	..	3	..
Heart diseases ..	38	..	..	..	..	15	23
Accidents	10	6	2	..	..	2	..
Suicides	2	..	..	..	..	2	..
All other causes ..	101	18	8	5	2	17	51
All causes	294	68	30	9	9	84	94

During the year I have made systematic and special inspections through the district: monthly reports have been made to the Sanitary Committee in which any question specially affecting the health of the town has been referred to, and when necessary, suggestions submitted for abatement or improvement.

J. MOUNTFORT JOHNSON, M.D.,

Medical Officer of Health.

SANITARY INSPECTOR'S REPORT.

ACTION TAKEN FOR THE ABATEMENT OF NUISANCES, &c.

During the year ending December, 1901, the following cases of Nuisance and other matters complained of were dealt with, comprising:—

	CASES
Defective or want of private drainage	47
Slop-stone drains admitting sewer gas into house disconnected	9
Defective water closets	31
Offensive privies	16
Accumulation of offensive matter	16
Offensive cesspools filled up	8
Want of drain ventilation	2
Dilapidated buildings	12
Houses in a filthy condition	2
Nuisances arising from overcrowding	9
Defective water spouting	3
Want of proper water supply	1
Swine kept within 60 feet of dwelling house ...	1
Want of proper bedroom ventilation	1
Slaughter-house nuisance	1
Water course polluted by sewage	3
Poultry kept in dwelling house contrary to Bye-Laws	1
Nuisance from fish frying	1
Nuisance from offal boiling	1
Want of proper paving in private yards attached to dwelling houses	3

Want of privy or water closet accommodation ...	4
Want of proper receptacles for ashes	9
Nuisance arising from dense black smoke	8
Number of houses disinfected	44
Number of schools disinfected	2
Number of infected articles, bedding, &c., disinfected or destroyed	979
Number of houses unfit for human habitation closed	3
Number of closed houses made fit for habitation ...	2

A considerable number of nuisances were promptly abated on the same being intimated to the persons responsible.

There are 13 unexpired notices of nuisances remaining on the books not yet complied with.

UNSOUND FOOD.

112 lbs. of fish, unfit for human food, were condemned and destroyed.

OFFENSIVE PRIVIES AND CESSPOOLS.

	CASES
Offensive privies converted into water closets ...	8
Offensive ashpits abolished, and portable receptacles provided in lieu thereof	30

REMOVAL OF ASHES AND NIGHT-SOIL.

The Scavenging Department removed 4396 loads of house ashes and garbage, compared with 5010 during the preceding year, and 278 loads of night-soil. I beg to call attention to the fact that the present tip for ashes and garbage is now nearly filled up, and suitable provision must be made for the disposal of house refuse in the future. As all tips of this kind are highly objectionable, the question arises as to whether arrangements should not be made to provide a destructor. All accumulations of house refuse contain more or less infectious matter dangerous to health, and ought to be destroyed. Their frequent removal from premises demands as much care as the acquisition of food, and other things necessary to sustain life ; and however costly it may prove, its removal and destruction is a necessary part of the economy of every family and every community.

COMMON LODGING-HOUSES.

There are 4 houses licensed under the Common Lodging-houses Acts, for the reception of 111 casual lodgers. The regulations approved by the Local Government Board for their management are being satisfactorily observed. No case of infectious disease occurred in these houses during the year.

SLAUGHTER-HOUSES.

There are 6 licensed Slaughter-houses within the Town, subject to the Bye-laws approved by the Local Goverment Board.

WORKSHOPS.

The Workshops within the limits of the Leek Improvement Act were inspected from time to time, and any suggestion made with a view to keeping the same in a satisfactory condition was readily complied with by the occupier.

BAKEHOUSES.

There are now 23 Bakehouses within the Town, in which 46 males over 16 years of age, 2 females over 16 years of age, and 6 males under 16 years of age are employed. There is now only one undergrouud Bakehouse within the Town. During the year one Bakehouse has been closed in consequence of its unsatisfactory condition.

PETROLEUM STORES.

There are 2 licenses in force within the Town for the keeping or sale of Petroleum or other substances of a like nature.

GAS SUPPLY.

The purity of the Gas supplied to the Town was tested from time to time in the manner required by the 34th and 35th Vic., cap. 41. Impurity arising from the presence of sulphuretted hydrogen was shown by the tests made at the Town Hall on one day during the year, and on four days impurity was detected in the Gas supplied to certain Factories situate at the west side of the Town.

NOTIFICATION OF INFECTIOUS DISEASE.

During the year ending 1901, 57 cases of infectious diseases, consisting of 19 cases of scarlet fever; 14 of diphtheria: 12 of enteric fever; 11 of erysipelas; and 1 of membranous croup; were notified during the year, and the necessary steps promptly taken to prevent the spread of the disease. Thirty-two of these cases were removed to the infectious diseases hospital, and the remainder treated at their homes. Notwithstanding the efforts of the department, it has been found exceedingly difficult in many cases to secure satisfactory isolation of cases of infectious disease at home. Thoughtless persons attending upon the patient mixing with others without taking proper precautions, and receiving visitors into the infected house, have been the means of spreading the infection to a large extent. In other instances, especially scarlet fever, cases have been of so mild a character that it was not thought necessary to call in the doctor, and the case has gone unrecognised, the children being allowed to mix with others, and spread the infection. The source of milk supply is recorded in every case of infectious disease notified, and we have no evidence of any mischief resulting from its distribution.

ISOLATION HOSPITAL.

Year ending December, 1901.

Number of	patients	in Hospital, Jan. 1st, 1901. ...	12
Do.	do.	admitted during the year ...	32
Do.	do.	discharged do. ...	38
Do.	do.	died do. ...	4
Do.	do.	in Hospital, Dec. 31st, 1901. ...	2

The average duration in Hospital of each patient discharged or died was 38·1 days.

INTERMENTS WITHIN THE TOWN.

During the year ending December, 1901, 6 interments took place in the Burial Ground attached to St. Edward's Church, and 13 in the ground attached to Mount Pleasant Wesleyan Chapel. The provisions of the Orders in Council relating thereto were duly observed.

TABLE 1.—ABSTRACT OF THE CENSUS RETURNS OF 1851, 1861, 1871, 1881 1891 AND 1901, WITHIN THE LIMITS OF THE LEEK IMPROVEMENT ACT.

Census Year	Area in Statute Acres	HOUSES.			PERSONS.			Average number of Persons per house.
		Inhabited	Uninhabited	Building	Males	Females	TOTAL	
1851	1460	1791	39	22	4315	4781	9096	5·06
1861	1460	2228	101	27	4686	5488	10174	4·56
1871	1460	2386	88	2	5087	6244	11331	4·74
1881	1460	2726	136	18	5874	6991	12865	4·71
1891	1460	3022	169	24	6420	7708	14128	4·67
1901	1460	3380	156	78	6917	8567	15484	4·58

TABLE 2.—POPULATION, BIRTHS AND DEATHS

Table showing the mean Population, the number of Births and Deaths, and the average annual number of Births and Deaths to 1000 persons living, and the mean Age at Death of males, females and persons within the limits of the Leek Improvement Act, during various periods of the 51 years ending 1901.—(W. H. H.)

Periods.	Mean Population	Total number of		Average Annual Number of Births and Deaths to 1000 living.		Mean Age at Death.		
		Births	Deaths	Births	Deaths	Males	Females	Persons
						Years.	*Years.*	*Years.*
10 years 1851-60	9635	3440	2819	35·7	29·3	23·5	25·9	24·8
10 years 1861-70	10752	3516	2540	32·7	23·6	29·1	34·7	32·0
10 years 1871-80	12098	4167	2734	34·4	22·6	30·8	32·3	31·5
10 years 1881-90	13496	4146	2668	30·1	19·8	32·7	35·9	34·3
10 years 1891-00	14803	4177	2832	28·2	19·1	36·1	38·4	37·2
1901	15509	406	294	26·1	18·9*	34·9	42·6	38·8

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* Deducting 17 deaths of non-residents who died within the town, the actual death rate is 17·8

Excluding the 17 Deaths in Public Institutions in the Town of persons brought there from other Districts, the corrected annual rate of mortality in the Urban District of Leek for the year ending December, 1901, is 17·8 to 1,000 living.

It will be seen by the foregoing No. 2 Abstract Table that during the last 41 years, the rate of mortality compared with that of the 10 years 1851-60 has been reduced 30 per cent, and the duration of life increased 30 per cent., which is equivalent to a reduction of 30 per cent. in the rate of sickness. Gradually the fact is being more fully recognised that in proportion as health is protected, and the duration of life enhanced, the wealth of the community is increased.

TABLE 3.—INFANT MORTALITY.

Table showing the number of Births; the number of Deaths under one year; and the rate of mortality to 1,000 births, within the limits of the Leek Improvement Act, during various periods of the 51 years ending 1901.

Periods.	Number of		Rate of Mortality to 1000 Births.
	Births.	Deaths under 1 year.	
10 years 1851-60	3440	646	187·8
10 years 1861-70	3517	573	162·9
10 years 1871-80	4167	670	160·7
10 years 1881-90	4146	585	141·1
10 years 1891-00	4177	620	148·4
Year 1901	406	68	167·4

The deaths of infants under the age of one year remain the blackest spot in the vital statistics of the town.

There is no doubt but that the objectionable system of the employment of mothers of infants from their homes is, to a large extent, responsible for the loss of infant life. Experience shows that infant mortality tends to rise when the staple trade is good, and falls when its bad.

TABLE 4.

Percentage of Illegitimate Births in Leek during each of the undermentioned periods, of the 51 years ending 1901.

Periods of Years.	Percentage of Illegitimate Births.
10 years 1851-60	9·7
10 years 1861-70	8·8
10 years 1871-80	8·5
10 years 1881-90	6·8
10 years 1891-00	5·6
Year 1901	5·6

HOUSING OF THE WORKING CLASSES' ACT.

During the year 1901, it has not been necessary to resort to the provisions of this Act, further than closing 3 houses unfit for human habitation.

CANAL BOATS ACTS, 1877 AND 1884.

During the year ending December 1901, 57 Canal Boats were inspected within the Urban Sanitary District of Leek. With 5 exceptions, the conditions of the Boats and their occupants, as regards the several matters dealt with in the Acts and Regulations, were satisfactory. No proceedings were taken beyond cautioning the persons concerned.

DAIRIES, COW-SHEDS & MILK-SHOPS ORDERS 1885

There are 43 persons registered pursuant to the above mentioned Orders within the Urban Sanitary District of Leek. All registered premises were inspected half-yearly. The Regulations of the Local Authority made in that behalf, which came into force on the first day of August, 1891, are being enforced. There are 199 milch cows kept within the district.

SANITARY CONDITION OF SCHOOLS.

During the year additional improvements were made by managers of several of the Elementary Schools in increasing the accomodation, and materially improving their Sanitary condition. The total number of scholars on the register at the end of December, 1901, was 3,038.

R. FARROW,

Sanitary Inspector.